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Sir:

RE: International Patent Application
PCT/CA2004/002179 - December 22, 2004
Priority: U.S. Patent Application No. 60/531,976
Filed: December 24, 2003
"Continuous Production of Carbon Nanotubes"
Applicant: Nanometrix Inc.
Our Reference: 16740-2PCT SC/JP/mp

This follows the Demand of October 21, 2005 and a conversation with Examiner Parsons on December 21, 2005.

Please amend the application as follows.

CLAIMS

Please substitute the complete set of claims submitted here for the complete set of claims on file.

REMARKS

Claims 1 to 41 are in the case.

The claims on file have been amended for greater clarity and with regard to the Examiner's comments.

Claims 1, 3, 13, 15, 28 and 31 have been amended to include the feature of a uniform supporting layer. Support for this amendment is found at least on page 5 in the paragraph bridging to page 6. The Applicant submits that as such the newly amended claims are neither taught nor suggested references.

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Having regard to the foregoing and the amendment it is believed that the Examiner should be in a position to establish a favourable IPER.

Respectfully submitted,

ORIGINAL SIGNÉ PAR
ORIGINAL SIGNED BY

OGILVY RENAULT
Signed by MURPHY, Kevin P.
Patent Agent and Partner of the firm

SC/JP/mp

Enclosures: New set of claims

CLAIMS:

1. A method of manufacturing a nanotube growing mat comprising:

   providing a substrate comprising a uniform supporting layer and carbon;

   applying nanosized catalytic particles in a bi-dimensionally organized monolayer on the uniform supporting layer in a predetermined pattern, the pattern promoting growth in an organized manner from the catalytic particles as a function of the pattern.

2. The method of claim 1, wherein the substrate is porous.

3. The method of claim 1, wherein the uniform supporting layer comprises a patterned monolayer of carbon nano- or micro-particles.

4. The method of claim 3, wherein the substrate comprises non-carbon elements selected from the group consisting of Si, N, and P, to produce a hetero-substrate.

5. The method of claim 4, wherein substrate and the hetero-substrate are placed in a multilayer configuration.

6. The method of claim 4, wherein the hetero-substrate contains Si which is incorporated into the nanotube produced on the mat and produces a hetero-nanotube with carbon and silicon.

7. The method of claim 5, wherein the multilayer configuration produces a complex nanotube comprising carbon and silicon in alternating layers.

8. The method of claim 1, wherein the catalytic particles are a metal.

9. The method of claim 8, wherein the catalytic particles are deposited in a monolayer.

10. The method of claim 8, wherein the metal is selected from the group consisting of Fe, Co, Ni, Y, Mo and their alloys.

11. The method of claim 10, wherein the nanosized catalytic particles are applied by an application method selected from the group consisting of transmission electron microscopy, monolayer generator 1 method, Langmuir-Blodgett, apparatus producing Langmuir-Blodgett films and Dynamic Thin Laminar Flow.

12. The method of claim 11, wherein the application method is the monolayer generator 1 method.

13. A method of producing organized nanotubes comprising:

preparing a nanotube growing mat comprising:

a substrate comprising a uniform supporting layer and carbon; and

nanosized catalytic particles in a bi-dimensionally organized monolayer on the substrate, wherein the catalytic particles are applied in a predetermined pattern on the uniform supporting layer, the pattern

promoting growth of nanotubes in an organized manner which is a function of the pattern;

activating the mat; and

flowing a carrier gas in a direction whereby the nanotubes are produced from the mat on a continuous basis.

14. The method of claim 13, wherein the substrate is porous.

15. The method of claim 12, wherein the uniform supporting layer comprises a patterned monolayer of carbon nano- or micro-particles.

16. The method of claim 15, wherein the substrate comprises non-carbon elements selected from the group consisting of Si, N, and P, to produce a hetero-substrate.

17. The method of claim 16, wherein substrate and the hetero-substrate are placed in a multilayer configuration.

18. The method of claim 16, wherein the hetero-substrate contains Si which is incorporated into the nanotube produced on the mat and produces a hetero-nanotube with carbon and silicon.

19. The method of claim 17, wherein the multilayer configuration produces a complex nanotube comprising carbon and silicon in alternating layers.

20. The method of claim 13, wherein the carrier gas comprises a carbon source, a hydrogen source and an inert gas.

21. The method of claim 20, wherein the inert gas is selected from the group consisting of He, Ne, Ar, Kr, and Xe.

22. The method of claim 21, wherein the inert gas is Ar.

23. The method of claim 13, wherein in the nanotubes are gathered and drawn away from the mat by an anchorage device or a negative pressure.

24. The method of claim 23, wherein the nanotubes are gathered by a negative pressure.

25. The method of claim 13, wherein activating the mat is achieved by applying an electric current across the mat.

26. The method of claim 13, wherein the catalytic particles are a metal.

27. The method of claim 26, wherein the metal is selected from the group consisting of Fe, Co, Ni, Y, Mo and their alloys.

28. A nanotube growing mat comprising:

a substrate comprising a uniform supporting layer and carbon;

nanosized catalytic particles, wherein a set is applied in a bi-dimensionally organized monolayer on the substrate in a predetermined pattern which

promotes growth of nanotubes from the catalytic particles as a function of the pattern.

29. The mat of claim 28, comprising an electrical connection.

30. The mat of claim 28, wherein the substrate is porous.

31. The mat according to claim 28, wherein the uniform supporting layer comprises a patterned monolayer of carbon nano- or micro-particles.

32. The mat of claim 31, wherein the carbon substrate comprises non-carbon elements selected from the group consisting of Si, N, and P, to produce a hetero-substrate.

33. The mat of claim 32, wherein carbon substrate and the hetero-substrate are placed in a multilayer configuration.

34. The mat of claim 33, wherein the hetero-substrate contains Si which is incorporated into the nanotube produced on the mat and produces a hetero-nanotube with carbon and silicon.

35. The mat of claim 33, wherein the multilayer configuration produces a complex nanotube comprising carbon and silicon in alternating layers.

36. The mat of claim 28, wherein the nanotubes are gathered and drawn away from the mat by an anchorage device or a negative pressure.

37. The mat of claim 36, wherein the nanotubes are gathered by a negative pressure.

38. The mat according to claim 28, wherein the catalytic particles are a metal.

39. The mat according to claim 38, wherein the metal is selected from the group consisting of Fe, Co, Ni, Y, Mo and their alloys.

40. The mat according to claim 28, wherein the nanosized catalytic particles are deposited on the carbon substrate by a method selected from the group consisting of transmission electron microscopy, monolayer generator 1 method, Langmuir-Blodgett, apparatus producing Langmuir-Blodgett films and Dynamic Thin Laminar Flow.

41. The mat according to claim 40, wherein the method is the monolayer generator 1 method.